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Appl. No. 10/710,596
Amdt. dated September 13, 2007
Reply to Office action of June 13, 2007Amendments to the Claims

This listing of the Claims will replace all prior versions and listings of the claims in this patent application.

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Listing of the Claims

Claims 1-42. (canceled)

- 10 43. (currently amended) A chip structure circuit component comprising:
a silicon semiconductor substrate;
a resistor in said silicon substrate, wherein said resistor comprises silicon with a dopant;
a MOS device comprising a portion in said silicon substrate;
15 a metallization structure over said silicon semiconductor substrate, wherein said metallization structure comprises a first metal layer and a second metal layer over said first metal layer;
a dielectric layer between said first and second metal layers;
a passivation silicon nitride layer over said metallization structure and over said dielectric layer, wherein said passivation layer comprises silicon nitride; and
20 a circuit trace over said passivation silicon nitride layer, wherein said circuit trace is connected to said resistor, and
a resistor connected to said circuit trace.
- 25 44. (currently amended) The chip structure circuit component as claimed in claim 43, wherein said resistor comprises silicon with a dopant comprises of boron.

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45. (currently amended) The chip structure circuit component as claimed in claim 43,
wherein said ~~resistor comprises silicon with a dopant~~ comprises of phosphorous.
- 5 46. (currently amended) The chip structure circuit component as claimed in claim 43,
wherein said ~~resistor comprises silicon with a dopant~~ comprises of arsenic.
47. (currently amended) The chip structure circuit component as claimed in claim 43,
wherein said ~~resistor comprises silicon with a dopant~~ comprises of gallium.
- 10 48. (currently amended) The chip structure circuit component as claimed in claim 43
further comprising a polymer layer between said passivation silicon-nitride layer and
said circuit trace.
49. (currently amended) The chip structure circuit component as claimed in claim 48,
15 wherein said polymer layer comprises polyimide (PI).
50. (currently amended) The chip structure circuit component as claimed in claim 48,
wherein said polymer layer comprises benzocyclobutene (BCB).
- 20 51. (currently amended) The chip structure circuit component as claimed in claim 43
further comprising a polymer layer on said circuit trace.
52. (currently amended) The chip structure circuit component as claimed in claim 51,
wherein said polymer layer comprises polyimide (PI).
- 25 53. (currently amended) The chip structure circuit component as claimed in claim 51,
wherein said polymer layer comprises benzocyclobutene (BCB).

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54. (currently amended) The chip structure circuit component as claimed in claim 43,
wherein said circuit trace comprises a copper layer.

5 55. (currently amended) The chip structure circuit component as claimed in claim 54,
wherein said circuit trace further comprises a nickel layer over said copper layer.

56. (currently amended) The chip structure circuit component as claimed in claim 54,
wherein said circuit trace further comprises a gold layer over said copper layer.

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57. (currently amended) The chip structure circuit component as claimed in claim 54,
wherein said circuit trace further comprises a titanium-containing layer under said
copper layer.

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58. (currently amended) The chip structure circuit component as claimed in claim 57,
wherein said titanium-containing layer comprises tungsten.

59. (currently amended) The chip structure circuit component as claimed in claim 54,
wherein said circuit trace further comprises a chromium-containing layer under said
copper layer.

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60. (currently amended) The chip structure circuit component as claimed in claim 43,
wherein said circuit trace comprises a gold layer.

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61. (currently amended) The chip structure circuit component as claimed in claim 60,
wherein said circuit trace further comprises a titanium-containing layer under said
gold copper layer.

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62. (currently amended) The chip structure circuit component as claimed in claim 61,
wherein said titanium-containing layer comprises tungsten.

63. (currently amended) The chip structure circuit component as claimed in claim 43,
wherein said metallization structure comprises aluminum.

64. (currently amended) A chip structure circuit component comprising:

a silicon substrate;

a resistor in said silicon substrate, wherein said resistor comprises silicon with a
dopant;

multiple a MOS devices device comprising a portion in said silicon substrate;

a metallization structure over said multiple MOS devices silicon substrate,

wherein said metallization structure comprises a first metal layer and a second metal
layer over said first metal layer;

a dielectric layer between said first and second metal layers;

a passivation layer over said metallization structure and over said dielectric
layer; and

a circuit trace over said passivation layer, wherein said circuit trace is
connected to said resistor, and wherein said circuit trace comprises a
titanium-containing layer and a gold layer over said titanium-containing layer; and

a resistor connected to said circuit trace.

65. (currently amended) The chip structure circuit component as claimed in claim 64,
wherein said resistor comprises silicon with a dopant comprises of boron.

66. (currently amended) The chip structure circuit component as claimed in claim 64,
wherein said resistor comprises silicon with a dopant comprises of phosphorous.

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67. (currently amended) The chip structure circuit component as claimed in claim 64,
wherein said ~~resistor comprises silicon with a dopant~~ comprises of arsenic.

5 68. (currently amended) The chip structure circuit component as claimed in claim 64,
wherein said ~~resistor comprises silicon with a dopant~~ comprises of gallium.

69. (currently amended) The chip structure circuit component as claimed in claim 64
further comprising a polymer layer between said passivation layer and said circuit
trace.

10 70. (currently amended) The chip structure circuit component as claimed in claim 69,
wherein said polymer layer comprises polyimide (PI).

15 71. (currently amended) The chip structure circuit component as claimed in claim 69,
wherein said polymer layer comprises benzocyclobutene (BCB).

72. (currently amended) The chip structure circuit component as claimed in claim 64
further comprising a polymer layer on said circuit trace.

20 73. (currently amended) The chip structure circuit component as claimed in claim 72,
wherein said polymer layer comprises polyimide (PI).

74. (currently amended) The chip structure circuit component as claimed in claim 72,
wherein said polymer layer comprises benzocyclobutene (BCB).

25 Claims 75-82 (canceled)

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83. (currently amended) The ~~chip structure circuit component~~ as claimed in claim 64,
82, wherein said titanium-containing layer comprises tungsten.

84. (currently amended) The ~~chip structure circuit component~~ as claimed in claim 64,
5 wherein said metallization structure comprises aluminum.

Claims 85-88 (canceled)

89. (new) A chip structure comprising:
10 a silicon substrate;
a resistor in said silicon substrate, wherein said resistor comprises silicon with a
dopant;
a MOS device comprising a portion in said silicon substrate;
a metallization structure over said silicon substrate, wherein said metallization
15 structure comprises a first metal layer and a second metal layer over said first metal
layer;
a dielectric layer between said first and second metal layers;
a passivation layer over said metallization structure and over said dielectric
layer; and
20 a circuit trace over said passivation layer, wherein said circuit trace is
connected to said resistor, and wherein said circuit trace comprises a third metal layer
and a copper layer over said third metal layer.

90. (new) The chip structure as claimed in claim 89, wherein said dopant comprises
25 boron.

91. (new) The chip structure as claimed in claim 89, wherein said dopant comprises
phosphorous.

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92. (new) The chip structure as claimed in claim 89, wherein said dopant comprises arsenic.
- 5 93. (new) The chip structure as claimed in claim 89, wherein said dopant comprises gallium.
94. (new) The chip structure as claimed in claim 89 further comprising a polymer layer between said passivation layer and said circuit trace.
- 10 95. (new) The chip structure as claimed in claim 94, wherein said polymer layer comprises polyimide (PI).
96. (new) The chip structure as claimed in claim 94, wherein said polymer layer comprises benzocyclobutene (BCB).
- 15 97. (new) The chip structure as claimed in claim 89 further comprising a polymer layer on said circuit trace.
98. (new) The chip structure as claimed in claim 97, wherein said polymer layer comprises polyimide (PI).
- 20 99. (new) The chip structure as claimed in claim 97, wherein said polymer layer comprises benzocyclobutene (BCB).
- 25 100. (new) The chip structure as claimed in claim 89, wherein said third metal layer comprises titanium.

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101. (new) The chip structure as claimed in claim 89, wherein said third metal layer comprises chromium.

5 102. (new) The chip structure as claimed in claim 89, wherein said metallization structure comprises aluminum.